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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,255	05/01/2001	Tomohisa Yamamoto	108421-00013	2846

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EXAMINER	
RUDE, TIMOTHY L	
ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/845,255	YAMAMOTO ET AL.	
	Examin r	Art Unit	
	Timothy L Rude	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims

1. Claim 1 is amended. Claim 17 is added necessitating new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (Park) USPAT 6,372,354 B1 in view of Leenders et al (Leenders) USPAT 6,366,013 B1.

As to claims 1 and 16, Park discloses in Figure 1 an anti-static film for a display (materials embedded in hardcoat layer, col. 6, lines 19-23), comprising a hardcoat layer wherein layers 12 and 13 fill pores of layers 11 (col. 6, lines 19-23) to form a single coating (Applicant's monolayer structure) provided on the surface of a transparent substrate, 10, wherein said hard coat layer contains at least polymer (Applicant's resin) (col. 4, lines 6-11), Antimony Tin Oxide (ITO, Applicant's conductive material) (col. 4, lines 42-46), and silica (Applicant's low refractive index material) (col. 6, lines 10-23), surface electric resistance thereof is 1.7×10^6 Ω/□ to 2.3×10^6 Ω/□ (col. 7, lines 9-16)

(less than Applicant's 1.0 X 10^{11} Ω/□ or less), and the 5-degree specular reflectance (col. 7, lines 31-38) is 4.0% or less (Figure 2). Please note that the ITO is applied as layer 12 and must fill pores (diffuse, col. 8, lines 15-17) resulting in a single composite hard coating in order to achieve a surface electric resistance of 1.7 X 10^6 Ω/□ to 2.3 X 10^6 Ω/□ ; it other words, the surface resistance would be much higher if the surface was merely the alkoxide polymer layer, 13 (please note col. 5, line 65 through col. 6, line 10). Figure 1 illustrates the layers as they are applied rather than the single composite coating that results subsequent to diffusion of layers 11, 12, and 13, into one another.

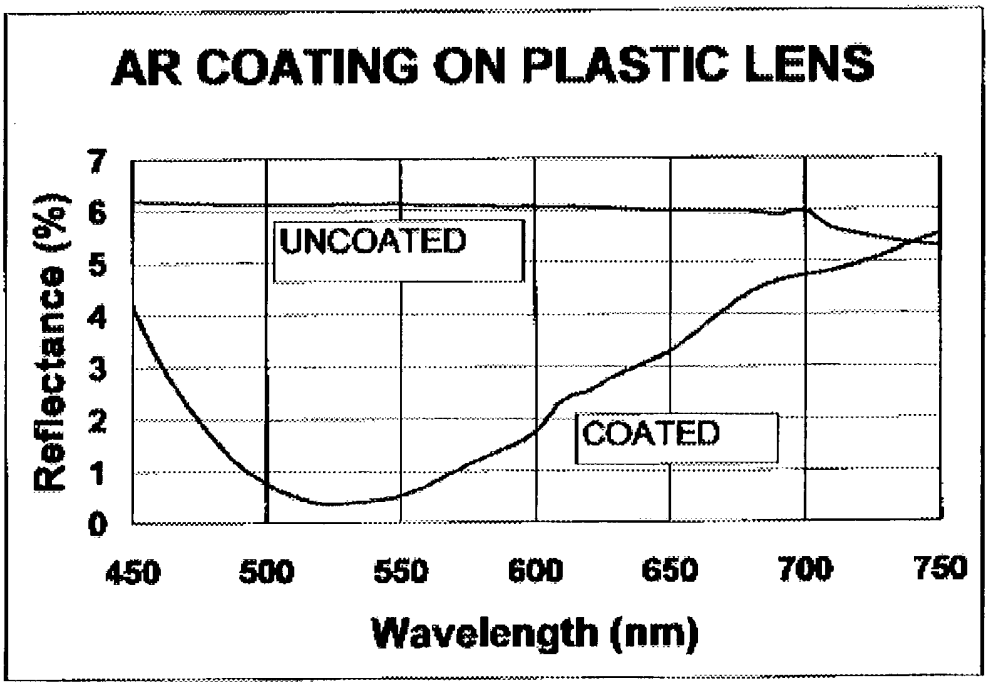

FIG. 2

Park does not explicitly disclose the exact range of surface electrical resistance and the exact range of Y value obtained by 5 degree specular reflectance. However, the ranges taught by Park, above, are within the respective claimed ranges. Therefore

the narrower ranges of Park read on the claimed ranges for surface electrical resistance and 5 degree specular reflectance. Please note that obviousness is not required here, since the ranges of Park are narrower than the claimed ranges and they fall entirely within the claimed ranges.

Park does not explicitly disclose use of a hard coat comprising a UV curable acrylic resin.

Leenders teaches the formation of an anti-reflective coating (Abstract) and a hard coat layer comprising UV curable Acrylate (Applicant's UV curable acrylic resin) (col. 10, lines 22-27) to improve the indentation strength of the surface (col. 2, lines 23-37).

Leenders is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use hard coat of UV curable acrylic resin to improve the indentation strength of the surface.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Park with the hard coat of UV curable acrylic resin of Leenders to improve the indentation strength of the surface.

As to claim 2, Park in view of Leenders discloses an anti-static film for a display, in accordance with claim 1.

Park in view of Leenders does not explicitly disclose a film, wherein said low refractive index material has a particle size of 5 to 500 nm.

Park discloses a film, wherein said low refractive index material has a particle size that is sub-micron (because particle size must necessarily be less than or equal to the thickness of the applied sub-micron thick particle layer) (col. 4, lines 30-34) Park also discloses a conductive particle size of 120 to 145 nanometers (within Applicant's 5 to 500 nm), with the reason, suggestion, or motivation of producing suitable films without producing unwanted streaking or unwanted opaqueness (col. 4, lines 52-54).

Therefore it would have been obvious to one having ordinary skill in the art of liquid crystal displays to combine the use conductive and low refractive index material particles, sized within the claimed range of 5 to 500 nanometers, with the hardcoat layer of Park in view of Leenders.

As to claim 3, Park discloses an anti-static film for a display, in accordance with claim 1, wherein said low refractive index material is contained at 1.4 wt. % to 2.3 wt. % (Applicant's 15 to 200 weight parts to 100 weight parts) of said conductive material (Table 1, col. 8, lines 20-28).

As to claim 4, Park discloses an anti-static film for a display, in accordance with claim 1, wherein said low refractive index material is silica sol (col. 6, lines 7-10).

As to claim 5, Park discloses an anti-static film for a display, in accordance with claim 2, wherein said low refractive index material is silica sol (col. 6, lines 7-10).

As to claim 6, Park discloses an anti-static film for a display, in accordance with claim 3, wherein said low refractive index material is silica sol (col. 6, lines 7-10).

As to claim 7, Park discloses an anti-static film for a display, in accordance with claim 1, wherein said conductive material is metal oxide particles (col. 4, lines 42-45).

As to claim 8, Park discloses an anti-static film for a display, in accordance with claim 2, wherein said conductive material is metal oxide particles (col. 4, lines 42-45).

As to claim 9, Park discloses an anti-static film for a display, in accordance with claim 3, wherein said conductive material is metal oxide particles (col. 4, lines 42-45).

As to claim 10, Park discloses an anti-static film for a display, in accordance with claim 4, wherein said conductive material is metal oxide particles (col. 4, lines 42-45).

3. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Leenders, as applied to claims 1-10 and 16 above, in view of Cinquina et al (Cinquina) USPAT 5,750,054.

As to claim 17, Park discloses the weight percentages as they are mixed into the materials used to form layers 12 and 13 in Table 1 (col. 8, lines 20-30). However, Park

does not disclose the after heating and after evaporation weight percentages. Applicant discloses information about substantial shrinkage during processing, so one might well expect the coating of Park to meet Applicant's very broad range of 10 to 80 percent by weight, since it depends upon the same composition and principles to achieve the same performance. Please note that Applicant's enabling disclosure is an indication that the coating of Park must meet Applicant's claimed range in order to perform as Park discloses. This is not improper hindsight, since it is a teaching of the performance properties of the materials used.

As proof of the obviousness of Applicant's claimed weight percent range, Cinquina is applied to show such a range is suitable to achieve the performance disclosed by Park. In other words, Cinquina is evidence that the coating of Park must meet Applicant's claimed range in order to perform as Park discloses. Cinquina teaches an anti-glare, anti-static coating for a reflective-transmissive surface wherein the electroconductive material comprises 5 to 25 wt. % and the siliceous material comprises 0.5 to 1.0 wt. % (col. 5, lines 9-20, and col. 6, lines 27-30).

Cinquina is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use weight percents within Applicant's claimed range as an art recognized suitable means to comprise an anti-glare, anti-static coating with desirable performance.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention to optimize the results effective variable of weight percents of Park with the percentages of Cinquina to achieve desirable anti-glare, anti-

static coating performance, as was likely done by Park, but not explicitly disclosed by Park.

4. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Leenders, as applied to claims 1-10 and 16 above, in view of Hahn et al (Hahn) USPAT 4,422,721.

As to claims 11-15, Park in view of Leenders discloses an anti-static film for a display, in accordance with claims 1, 2, 4, and 7. Park also discloses the use of adhesion-promoting coatings as prior art (col. 2, lines 34-46) to promote adhesion of the anti-reflection coating.

Park in view of Leenders does not explicitly disclose a film, wherein at least two layers of said layers are colored, and said colors are made to be achromatic by mixing.

Hahn teaches the use of layers, wherein at least two layers of said layers are colored, to compensate for the indium tin oxide layer so as to maintain achromatic low reflectivity in the visible spectrum (Applicant's said colors are made to be achromatic by mixing) (col. 7, lines 22-37).

Hahn is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to make at least two layers of said layers colored, and said colors are made to be achromatic by mixing so as to maintain achromatic low reflectivity in the visible spectrum.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Park in view of Leenders with the additional colored layer(s) of Hahn to compensate for the color of the conductive material in order to maintain achromatic low reflectivity.

Response to Arguments

5. Applicant's arguments filed on 13 May 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

(1) Contrary to the present invention, Park discloses a first layer of ITO and a second layer of SiO_2, and a spin method, rather than a monolayer structure.

(2) Office Action fails to provide motivation to use claimed ranges for surface electric resistance and specular reflectance.

(3) Regarding claim 3, it is unclear what percentage of conductive material is disclosed by Park and the mixing ratios are unclear, and solution concentrations are irrelevant to mixing ratio.

(4) The thickness of the three-layer structure of Park does not correlate with the mixing of the present invention.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that Park discloses, subsequent to spin, reacting the layers which causes the SiO_2 gels to contract the ITO layer vertically and horizontally, resulting in a compact microstructure of a composite that is subsequently dried at the low temperature of 50 to 100 degrees C (col. 5, line 60 through col. 6, line 5). Please note that the finished structure of Park in view of Leenders reads on the device claims as broadly written despite differences in the steps of the method of making.

(2) It is respectfully pointed out that Park discloses narrower ranges than are claimed and the narrower ranges fall entirely within the ranges as claimed which renders motivation moot. Please note that a prior art teaching of a narrower range that falls entirely within the claimed range reads on the claimed invention.

(3) It is respectfully pointed out that the percentage of conductive material is given in the first column of table 1 in column 8 of Park. Also note coating thickness (col. 8, lines 9-20) (Applicant's mixing ratio is a function of weight percentage and coating thickness – mixing [diffusion] takes place during heating). Please note that Applicant's claimed mixing ratio is easily derived from the percentage and thickness values of Park.

(4) It is respectfully pointed out that the three layer structure is converted into a single hard coating during heating that follows the spin application of said layers. Thereby mixing the materials in percentages that are a function of the layer thickness and weight percentages. Please note that examiner considers the prior art to teach a structure that would have made the claimed invention obvious to those of ordinary skill in the art of liquid crystals at the time the claimed invention was made. Applicant's

method of making might be patentably distinct, but the claimed structure produced is made obvious by the prior art per rejections above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703) 305-3492. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

Timothy L Rude
Examiner
Art Unit 2871

TLR
November 24, 2003

T. Chowdhury
Primary Examiner